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# Developing a Tactical Emergency Medical Support Program

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The development of a tactical emergency support (TEMS) program is an involved process. Multiple TEMS models effectively function and there is no "best model" for every agency. This article summarizes common components that must be considered in the development of a TEMS program. Components discussed include: goals of TEMS program, structure of the TEMS element, training for TEMS providers, law enforcement status, TEMS provider skill level, arming of TEMS providers, operating location, liability issues, insurance issues, and equipment for TEMS units. The proper development of a TEMS program will meet the primary goal of enhancing the tactical unit's mission accomplishment. **Key words:** CASEVAC, explosive ordinance disposal, hostage rescue team, special weapons and tactics, special response team, tactical combat casualty care, tactical emergency medical support, tactical medicine

**D**EVELOPING a tactical emergency medical support (TEMS) program for a law enforcement special operations team is not an easy task. While tactical commanders are increasingly aware of the benefits of an organic medical element (ie, an element that is part of the special operations unit), many still require convincing that this is a cost-effective and mission-enhancing investment. In addition, the tactical commander rarely gets to make this decision on his own. Rather, collaboration and approval by many different entities, such as the police chief, fire-rescue or emergency medical services (EMS) authority, general counsel or the legal department, and

risk management, is usually required to initiate a TEMS unit.

The development of a TEMS program must be based on individual agency need, applicable law, custom and practice, and the resources that can be brought to bear on the situation. There is no single "best" model that will work for every application and the people most suited to design a TEMS program are those with intimate knowledge of the affected agencies and systems. However, experience has demonstrated that there are basic questions that remain constant to all of these efforts.<sup>1</sup> This article discusses those common issues and explores a variety of proven solutions that have worked around the globe. Each solution must be judged on the basis of its applicability to individual circumstances.

Today, law enforcement agencies increasingly acknowledge the benefits of far forward emergency medical care at a broad spectrum of law enforcement missions.<sup>2</sup> Although tactical medicine was originally conceived as a support function for military and later, for police tactical teams, its value in other types of operations has become apparent over time. This type of medical support is now often utilized in counter drug and counterterrorism missions, surveillance cases, weapons of mass

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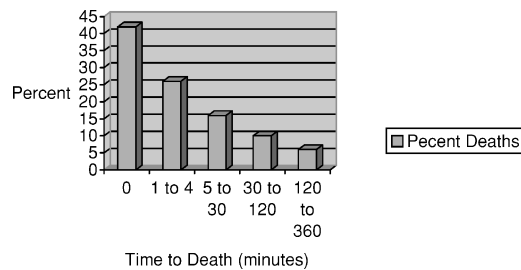
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destruction crisis management, protection details, forensic investigations, national security incidents, and major public events. The basic principles of tactical medicine have wide applicability to those situations in which people must work under hostile, austere, and prolonged transport conditions.

A rich military history and modern experience have suggested that a purely traditional approach to EMS in the tactical environment is not feasible and will expose out-of-hospital providers to unnecessary danger.<sup>3</sup> Such an approach may also be detrimental to the law enforcement mission. These factors mandate a different set of field assessment and treatment priorities, intelligence gathering and analytical skills, injury control practices, and strategies for managing performance decrement. Specialized medical support that is fully integrated with the team, executed by medical practitioners who are trained, skilled, and well equipped to operate in these unique environments, is part of the tool kit that allows special operations teams to push to the edge of the envelope with reasonable safety.

## BACKGROUND

TEMS finds its roots in military history. The Wound Data and Munitions Effectiveness Team (WDMET) study<sup>4</sup> was a joint effort of the US ordnance and medical communities in Vietnam. The WDMET study demonstrated that 90% of combat deaths occurred on the battlefield and only 10% occurred after reaching a medical treatment facility. This finding validated the philosophy first embraced by Bonaparte's surgeon Larrey, and supports the concept of far forward medical care during special operations. The WDMET data suggest that the greatest opportunity for life saving intervention is primarily during the early period after wounding. Of those who died on the battlefield, 42% succumbed immediately, 26% died within 5 minutes, 16% survived between 5 and 30 minutes, and an additional 8% to 10% died between 30 minutes and 2 hours after wounding. The remainder survived between 2 and 6 hours during prolonged evacuation



**Fig 1.** Time to death among casualties dying on the battlefield.

before reaching a medical treatment facility. While certain injuries occurring on the battlefield are simply not survivable, these data indicate that the population of casualties with potential to benefit from medical intervention is greatest in the first 30 minutes after wounding, since 42% of battlefield deaths did not occur immediately but also did not survive past 30 minutes (see Fig 1). This is a key factor in selecting a configuration for a tactical medical element. The greatest benefit will be achieved through a configuration that safely puts the caregiver at the patient's side within a few seconds to minutes of wounding.<sup>5</sup> Far forward placement of medical assets is lifesaving.

Today, the US military provides comprehensive medical support to its units and can continue to serve the civilian community as a template for TEMS program development. Civilian TEMS providers most closely resemble military special operations units where sophisticated training, tactical medicine programs, and integrated medical support have existed for decades.

The Naval Special Warfare Command has adopted training doctrine called Tactical Combat Casualty Care (TCCC).<sup>6</sup> The TCCC model was developed in part at the DoD's Casualty Care Research Center, Uniformed Services University of Health Sciences, in parallel with the Center's civilian tactical medicine training program and there are many similarities in the approaches. TCCC focuses on 3 phases of tactical care: care under fire, tactical field care, and casualty evacuation (CASEVAC). In the care under fire phase, analogous to the civilian "hot zone,"<sup>7</sup> the TEMS provider is under

direct hostile fire. Medical care in this phase is limited to very simple procedures that are life-saving, such as placement of a tourniquet for life-threatening hemorrhage. Unique to the military environment in this phase of care, the suppression of enemy fire is characterized as the “best medicine.” Tactical field care, equivalent to the civilian “warm zone,” is the phase when the TEMS provider is no longer under direct fire; however, a threat still exists. Tactical field care may involve transport of the casualty to a designated location for extraction. In this phase, more advanced care can be provided; however, the tactical situation mandates practice variance from the noncombat scenario. The last phase is the CASEVAC phase, analogous to the “cold zone,” where transport can be accomplished by conventional EMS; here the casualty is evacuated from the battlefield to a higher echelon of care. Advanced medical providers and equipment may be pre-positioned for this phase and advanced procedures that are clinically and operationally appropriate may be performed during transport. While these concepts were pioneered by military medicine, they have matured in both the civilian law enforcement special operations and military settings. In fact, many of the concepts of TCCC have been adopted by some modern civilian training courses, such as Pre-Hospital Trauma Life Support (PHTLS).<sup>8</sup>

With the notable exception of the Los Angeles Sheriff's Department (LASD), most police Special Weapons and Tactics (SWAT) teams did not include a medical component and rarely had a medical preplan. In contrast, the LASD has routinely deployed SWAT-trained medics on all call outs since 1971.<sup>9</sup> John Kolman, the founder of the National Tactical Officers Association, called for the inclusion of paramedics on tactical teams at least as early as 1982.<sup>10</sup> Although a few additional teams and scores of individuals around the country implemented a variety of programs, the concept did not enjoy widespread acceptance.

Therefore, until the early 1990s, law enforcement tactical teams have largely oper-

ated without their own direct medical support. The operational medical support of these units has consisted of calling 911. A step up from this system is the advance notification of community EMS services that an operation is taking place in a general area. An EMS unit may or may not be staged close to the scene. Over the past several decades there has been a trend toward increased recognition of the need for integrated TEMS.<sup>11</sup>

### GOALS OF TACTICAL EMERGENCY MEDICINE

The first question that is usually asked when proposing creation of a TEMS team is, “What's in it for the tactical team or the police department? Why should we invest time, effort, money and political capital in this idea?” A thorough explanation of the goals of tactical emergency medicine (Table 1) is responsive.

The primary goal of all tactical medical support is to enhance mission accomplishment. Mission success achieves the greatest good for the most number of people and is viewed in much the same way as a triage. Allocation of limited medical resources is measured in terms of its impact on the overall situation, not just on the individual patient. One concept that is foreign to many medical providers is that the team commander can, and sometimes should, make decisions limiting the delivery of medical care. The medical officer can make recommendations to the team

**Table 1.** Goals of tactical medicine

1. Enhance the probability of mission accomplishment.
2. Reduce mortality and morbidity among officers, perpetrators, and innocents.
3. Reduce line of duty injury and disability costs to the agency.
4. Reduce lost work time for specially trained, hard-to-replace officers.
5. Maintain good team morale.
6. Improve agency posture in a liability prone circumstance.

commander; however, the final decision will lie with the commander, since TEMS involves more than just a medical problem, but also an overarching operational problem. The best possible medical care, by conventional standards, may get more people killed in a given tactical scenario. Each medical decision must be made in the context of the tactical setting, and TEMS providers are regarded as experts in integrating medical and operational decisions.

Associated with the primary goal is the objective of reducing mortality and morbidity among all involved parties—officers, perpetrators, and innocents. Since the public safety mission, broadly stated, is to protect life and property, the operational mission should serve that end. Therefore, decreased overall mortality and morbidity associated with execution of the mission leads to increased success of the mission. Reduction of line of duty injury and disability costs for the agency is another subordinate goal. The fourth goal of tactical medicine is to reduce lost work time for specially trained, hard-to-replace officers. Fifth, a tactical medical program will foster good team morale when concern and accommodation for the team members' health and welfare is realized. The effect of high morale, generated when the team perceives the best medical care to be at hand, on the officers' willingness to take calculated risks in a dangerous situation should not be underestimated.

The final objective of TEMS is to improve the agency's posture in a liability-prone circumstance. Special operations units must engage in situations that are dangerous, thereby increasing risk for bad outcomes. Since potential for personal injury exists. The police department has a responsibility to mitigate that risk to the extent reasonably possible. Implementation of a TEMS program is one strategy for doing so that has been effective.

Furthermore, the presence of a tactical medical provider can eliminate medically unnecessary transfer of prisoners to the hospital for evaluation. Recent court cases have asserted that law enforcement personnel who bring dangerous prisoners to hospital emer-

gency departments and other medical facilities have a special duty to protect third parties from the prisoner.<sup>12,13</sup> In general, members of the public have no constitutional right to be protected by the state from harm caused by others. However, when law enforcement creates a foreseeable hazard by bringing a dangerous prisoner to a health care facility, a special obligation to protect others who may be there is incurred.

### STRUCTURE OF THE TEMS ELEMENT

The next issue that generally arises is, "What is the ideal structure of a TEMS element?" The answer to this question is greatly affected by local and regional factors and there is no single solution that will work for every tactical team. The response should be a local decision that considers the following factors:

- What is the organizational structure of the tactical team to be supported? Considering that the TEMS element must be fully integrated into the team's operations, what TEMS structure will fit best?
- What are the local political considerations? Which agency heads get along and which do not? Will this become a "turf battle?" Is enabling legislation required?
- Are budget funds available to support this proposal? Where will they come from and how large will the budget be? Does the program have to be started as a volunteer initiative?
- Are there liability or insurance issues that need to be resolved? Will TEMS be structured as part of a self-insuring government entity or as part of a private entity? Liability, malpractice, and line of duty injury/death coverage must be considered regardless of the employment or volunteer status of the TEMS providers.
- How is local EMS configured and how can the TEMS element best integrate with the health care system? TEMS is designed to bridge the gap between point of injury or illness and *appropriate* entry into the standing health care system, not

necessarily to replace local EMS. This can best be accomplished with a structure that fits well with the local system.

- Does the medical community understand the concept of TEMS and is there support for the proposed program from a cross section of physicians involved in EMS and trauma? Is a significant education effort required before the proposal will have widespread support within the community? Have the occupational health providers for the supported agency been given an opportunity to participate in the development of the proposal? It is important for the TEMS element to have a medical director who is experienced in tactical medicine and will serve as a proactive liaison between the team and the local medical community. Most TEMS medical directors of current programs are emergency physicians,<sup>14</sup> but knowledge of and passion for tactical medicine seem to be the most important ingredients for success.
- Will the medical practice act of the state easily accommodate this emerging, special-focus practice? Optimization of TEMS usually requires an expanded scope of practice for prehospital providers. Is the medical practice act sufficiently flexible to allow this without enabling legislation?

In the process of building a TEMS structure, it is useful to define the tactical team's mission and actually write it down.<sup>11</sup> Assess whether the structure meets the needs of the team for its day-to-day activities as well as the rare events that are, nonetheless, part of the mission. What level of care is expected by the medical community and by team members and can these expectations actually be met within resource constraints? Develop a written mission statement for the TEMS element that is complementary to the tactical team's mission. Write generic position descriptions based on this analysis and mission statement *before* deciding on the element's composition. Avoid the pitfall of writing position descriptions exclusively to match the individu-

als who are currently active in promoting the TEMS proposal.

## TRAINING

Multiple training programs exist for TEMS providers. States such as Delaware and Illinois, and some counties,<sup>15,16</sup> are adopting regional standards for training TEMS units. The best known training program accessible to civilian law enforcement is the Emergency Medical Technician-Tactical (EMT-T) school,<sup>17</sup> part of the Integrated Force Health Protection (IFHP) program (formerly part of the Counter Narcotics and Terrorism Operational Medical Support [CONTOMS] program). This 58-hour continuing medical education module is managed by the Casualty Care Research Center (CCRC) of the Uniformed Services University of Health Sciences. EMT-T brings military and civilian special operations medical providers together to bridge the gap between military medical science and application of this science to the unique environment of special operations. In fact, the military and law enforcement special operations missions have converged over the years, as law enforcement has taken up counterterrorism and weapons of mass destruction missions and the military has engaged in peacekeeping, nation-building, humanitarian assistance, and operations other than war. The IFHP program maintains the only national database of law enforcement special operations injuries and uses these data to drive the EMT-curriculum, assuring currency in the evidence-based content. The course assumes a minimum baseline medical knowledge at the EMT-Basic (EMT-B) level or equivalent. However, approximately 60% of program participants are EMT-Paramedics and 20% are physicians. After passing a written examination and field training exercise, EMT-T candidates are granted a 3-year certification, which is renewed by meeting continuing education requirements.

There are other training programs available through commercial, state, and federal entities and most follow similar curricula. These programs of instruction generally cover zones

of care, preventive medicine and injury control, medical threat assessment and mission planning, medicine across the barricade, equipment selection, extraction and rescue, remote assessment, support of extended operations and performance decrement, care under fire, chemical, biological, radiological, nuclear and high explosive response, toxic hazards and clandestine drug laboratories, and medical support of specific operations, such as dignitary protection and crowd control. These are addressed through a combination of didactic and laboratory sessions, as well as field training exercises. Some courses also include firearms training and tactical skills.

There are many factors involved in the selection of training for TEMS personnel. These factors include, but are not limited to, course availability, team mission, TEMS provider skill level, role of the TEMS provider in the team, and the cost of training. While there are multiple courses available, some have limited availability due to lack of federal funding. While other courses may be available, their cost can be prohibitive. The training selected will depend a great deal on the skill level of your team members and the acceptable scope of practice in your state for TEMS providers. Specialty training may also be required, depending on your team's mission. For example, if your tactical team has a very active maritime program, then training in hyperbaric medicine and diving medical technician skills may be a worthwhile investment.

## **TEMS UNIT COMPOSITION**

### **Law enforcement status**

There are 2 distinct issues that should be considered in the composition of the TEMS element: What, if any, law enforcement status should unit members have and what level of medical provider is best? Across the United States, there are successful TEMS programs with quite diverse composition. What works best in one location may not work well in another location. Each choice must be consid-

ered in a cost-benefit analysis specific to that jurisdiction.

Some teams require all of their TEMS providers to be fully sworn officers who are qualified first as tactical team members and secondarily as medics. This approach has several benefits: (1) the tactical team is an elite unit and is often slow to accept "outsiders"—having a team member as the TEMS provider instills confidence in other team members and meets operational security requirements; (2) the medic can provide his/her own security when not caring for a patient; and (3) the medic has arrest and custodial authority, which can be very useful when caring for a prisoner. On the other hand, medical support of the team then becomes a collateral duty, continuing education and skills maintenance in both the tactical and medical arenas may become burdensome, and the available manpower for this type of assignment is usually very limited. Perhaps most important, experience has demonstrated that role confusion can occur for a dual-trained, dual-tasked team member. It is not clear from moment to moment whether he is functioning as an operator, a medic, or both. Some of these problems can be minimized if the TEMS provider is a sworn officer, but not expected to function as a tactical team member first. All of these problems can be overcome in individual circumstances with adequate training and command leadership.

Many teams have opted to utilize fire/rescue/EMS personnel as TEMS providers. This has the advantage that medical support of the team is their primary function and they are not distracted by other duties. Generally, tactical team members will have greater confidence in their medical skills compared to the classroom-trained EMT who is a police officer first and has limited practical patient care experience. Continuing education and skills maintenance are easier to achieve and role confusion is less likely to occur. It also seems that the manning for this kind of assignment is more readily available. However, these providers have no arrest powers and will require an officer in attendance if they are

treating a prisoner. They also require the team to provide for their security at all times and represent an operational security risk if careful screening and background investigations are not accomplished before bringing them on the unit. Their relative lack of tactical skills can be remedied with rigorous training and most team commanders consider it easier to train a medic in tactics, than to train a tactical officer in medicine.

A few tactical teams continue to rely on “stand-by” coverage of their operations by conventional fire/rescue/EMS. While this is probably the easiest type of coverage to accomplish, it delays the delivery of care to the patient and is a grossly inadequate model for addressing tactical operational medical support.<sup>7</sup> TEMS is much more than emergency medical services in the tactical environment. It encompasses a special set of decision-making skills, clinical knowledge, and integration of operational and medical processes. As inferred earlier from military data,<sup>4</sup> the opportunities for successful intervention in the management of casualties are greatest in the first few minutes after wounding. Any plan that delays arrival of the medical provider at the patient’s side, such as having conventional EMS on standby, will have a deleterious effect on outcome and should be avoided whenever possible.

Law enforcement status is one important factor to consider when designing your TEMS system. While having providers with arrest powers is beneficial, it is not essential. Many outstanding programs are running in the United States today—some use sworn officers as medics and some do not. The confidence team members have in their medical providers is probably related more to a positive experience working together over time than to any other factor. Regardless of which configuration you select as the best fit for your program, it is essential to remember the “one person – one job” rule. On any given mission, a single individual tasked with the duties of more than one position (eg, medic and point man) will perform neither as well as if he had only one job. This does not preclude team

members from cross-training for a variety of roles—in fact, cross-training for multiple functions is one hallmark of a military special operations medic—but the scope of an individual’s responsibility on a specific operation should be limited to that which can be successfully accomplished by a single individual.

### Medical provider skill level

The medical qualifications of TEMS unit members can vary from EMT-B to physician and arguments can be made for each level. Again, each choice must be considered in a cost-benefit analysis specific to the individual jurisdiction. EMT-Bs have the requisite familiarity with the pre-hospital environment and often work closely with law enforcement personnel on a daily basis. They are readily available at modest cost, can maintain their skills and certifications with minimal clinical opportunities, and have adequate skills to provide lifesaving interventions during care under fire (basic airway maintenance, hemorrhage control, and rapid extraction). The downside of the use of EMT-Bs is their limited scope of practice, the inability to initiate advanced interventions, their requirement for medical control, and their limited ability to liaison with the medical community.

Paramedics, likewise, have the necessary field training and familiarity with the pre-hospital environment. They have an appropriate range of skills for the TEMS setting and are generally available in most communities at reasonable cost. Like EMTs, paramedics require medical control and therefore their independent decision-making on the scene of a tactical incident, where communications may be problematic due to tactical circumstances, is limited. They also require clinical opportunities to maintain skills and certification and continuing medical education begins to compete with operational training at this level, although proficiency in both skill sets is achievable in a well-managed program. While registered nurses (RNs) may possibly have a broader scope of practice than would paramedics, and are likely to do a good job as a liaison with the hospital community, most

lack experience in pre-hospital care. They also require medical control and are more costly than paramedics. Historically, nurses have not been heavily involved in TEMS.

Increasingly, physicians have become active TEMS responders, in addition to serving as TEMS medical directors.<sup>14</sup> They present the advantages of broad scope of practice and the status to function most effectively as a liaison with the local medical community. They obviously do not require medical control and can independently provide a full range of skills and interventions on the scene. However, most physicians have limited experience in pre-hospital care. They are the most costly provider to retain and have limited availability for no-notice, emergency response due to their clinical commitments. Furthermore, many physicians are unaccustomed to functioning in a support role where there may be more important priorities than the delivery of medicine.

### **ARMING PROVIDERS**

This is probably the most controversial issue in TEMS. It is important to acknowledge at this point that there are excellent programs that arm their medics and excellent programs that do not. Obviously, those programs that utilize sworn officers as their medics do not face this controversy.

The primary argument for arming medics is that the TEMS provider should not be placed in a circumstance where he cannot protect himself or his patient. The military routinely arms its medics and they have a duty to defend their patients, even though they are noncombatants.<sup>18</sup> Medics who are able to provide basic self-protection will be able to move more independently within the crisis site, at the incident commanders discretion. If the TEMS provider must be "protected" by other team members, the team's capability may be degraded. The armed tactical medic can function with the team in the hot zone as an effective team member, who serves as the commander's expert in medical matters. Legal authority and proper training to carry a

firearm may also provide a limited amount of off-duty protection for the TEMS operator. Perpetrators rarely take the time or interest to distinguish between tactical officers and medics. To them, everyone represents authority and several cases of coincidental encounters and stalking of tactical medics have occurred. While personal protection is only one small piece of the countermeasures to this risk, it is generally more practical if arming authority exists. According to a 1999 survey by Smock et al, 67% of tactical physicians are armed when working with the tactical team.<sup>14</sup>

Armed TEMS providers must have statutory authority to carry a firearm and should be trained and tested to the same standard as the law enforcement officers they support. Nothing less is acceptable. Training should address the applicable use of force policies, defensive tactics, fire control practices, and weapons retention skills. In fact, providers should train to an additional standard in weapons retentions, since patient care is likely to place them in positions of vulnerability that the tactical operator may not routinely face. Additionally, armed providers must train with the tactical team on a regular basis to build the trust and confidence of the team. The 1999 Smock survey of tactical physicians indicated each physician spent an average of 78 hours per year training with the tactical team.<sup>14</sup> Without the commitment to regular and intensive training the armed TEMS program faces great difficulties.

Arguments against arming TEMS providers include the possibility that this may create "role confusion" and that the TEMS provider will be more concerned with tactical objectives rather than the medical care of casualties. Certainly, a single TEMS provider cannot provide his own security in the warm zone while caring for a patient. He will still be relying on the team to establish a safe perimeter within which he can work. Tactical medicine should never be confused as a back door route to tactical team membership and personnel who are motivated by this objective should be identified and excluded from the tactical medical unit.



While unarmed medics may not be able to defend themselves or their patients as well, and may become an operational liability during high threat circumstances, they have several advantages. There is no need for increased training, no potential threat to fire control, and team liability may be lessened. Perhaps most important, the arming issue is a political “red flag” that may attract controversy that will not be weathered well by a start-up program. TEMS program proponents must weigh the costs and benefits of even raising this issue early in the program’s development and make a decision to proceed in the context of their particular circumstances.

TEMS units have identified a number of mechanisms for arming providers. The most obvious method is to utilize medics who are also sworn officers. This system functions well and allows the provider full law enforcement authority, although the level of medical skill tends to be more basic than that provided by other programs. Many jurisdictions have reserve or auxiliary sheriff/police officer programs that provide the opportunity for part-time status as a fully sworn officer. Alternatively, the laws of some jurisdictions permit every citizen to carry a weapon if the appropriate licenses or permits are obtained. TEMS elements planning to use this approach should ensure that their members’ training and testing exceeds that required of citizens and meets the same standard as the officers they support. However, it should be noted that the statutory authority permitting citizens to carry firearms does not confer law enforcement authority and training for medics armed via this mechanism should reflect this difference. For example, where a sworn officer has a duty to effect a legal arrest and may use reasonable force in doing so, the citizen does not have the same duty and use of force may be restricted to self-defense. In a few locales, the senior law enforcement officer has the legal authority to grant permission for any individual to carry a firearm. While this may cover the statutory requirement, it does not address the training requirement and should not be used as a mechanism for arming tactical

medical personnel without a comprehensive training standard.

Many smaller tactical teams do not have the support or the resources to establish and maintain the firearms qualifications of TEMS providers. It is simpler and more practical to have TEMS providers function in the cold zone and enter the warm or hot zones only under the protection of the tactical team. Both the armed and unarmed approaches have advantages and disadvantages and the individual teams must make their own decision based on their state laws, mission, and team composition.

#### OPERATING LOCATIONS

Consistent with the data presented earlier in this article regarding effective intervention with far forward tactical medical assets who can deliver aid within a few minutes of wounding, most TEMS programs focus on the delivery of care in the hot and warm zones. While direct patient care in the cold zone is virtually identical to conventional EMS, there are many planning and coordination functions that are performed in the cold zone, which are quite dissimilar from everyday EMS. Some systems use pre-hospital providers inside the inner perimeter and physicians at the outer perimeter for consultation, medical direction, and evacuation. Other programs maintain medical providers only in the “cold zone” and rely on the tactical team to evacuate patients to them. While this is very safe for the TEMS providers, it hardly meets the needs of the team or the casualty and virtually assures that the providers will be considered “outsiders” and be poorly integrated into the tactical team’s function.

The benefits of bringing TEMS functions into the hot zone include proximity to the site of injury, resulting in the shortest possible response time; good access in the event that the team is unable to evacuate the casualty; increased opportunities for preventive medicine and injury control; and improved integration of the medic’s role into the team.

On the other hand, this location presents the greatest risk to personal safety of the provider and the greatest chance of becoming an operational liability to the team. Moving the TEMS assets out to the warm zone—the last point of cover and concealment on a high-risk entry, for example—provides increased personal safety but preserves most of the advantages of proximity. Unfortunately, this position also makes it very possible for the medic to be cut off and isolated from his team or the casualty. It also makes it difficult for the medic to track and respond appropriately to a dynamic incident in which the zones of care rapidly change.

#### **LIABILITY AND INSURANCE ISSUES**

TEMS providers should ensure that they have adequate malpractice coverage specifically for their tactical medical activities. No provider wants to be faced with a lawsuit only to have all the agencies for which they thought they were working, deny liability. Which entity provides the coverage and how much coverage is needed will most likely be based on the type of TEMS system and the level of the provider. Medics who are employees of the law enforcement agency should ensure that their medical activities are covered under their department's existing insurance policies. If the department is self-insured, then specific reference regarding malpractice coverage should be included in the written TEMS policy. It is too late to discover that there was a "misunderstanding" after you have been served with legal papers in a lawsuit. If the department carries commercial insurance, remember that law enforcement agencies are not usually in the business of providing medical care and may not routinely carry malpractice insurance.

Medical providers who are employees of another service, such as fire/rescue or EMS, must assure that either the law enforcement agency or the employing agency have agreed to cover malpractice for TEMS activities. Many policies are written so that coverage is in force

only when providing care directly for the policyholder. Providers who carry personal malpractice (primarily physicians) and are not covered by the law enforcement agency should check directly with their carrier to assure coverage.

Tactical teams and their medical support work at the edge of the safety envelope. The possibility of incurring a disabling injury or death in the line of duty is small, but real. Medics should determine who will be responsible for paying medical bills and lost wages should injury occur. If the provider were functioning as an employee of the supported agency at the time of injury, then traditional workers compensation procedures would apply. However, if the actual employer is loaning the provider to the supported agency, then lines of responsibility are not quite as clear and it would be prudent to obtain a written determination of disability coverage in advance of any potential claim. TEMS volunteers generally do not have disability coverage unless it is specifically provided.

Many people forget about the need for general liability coverage in addition to malpractice and disability. General liability usually covers occurrences such as an "unlawful touching" allegation resulting from care rendered to a perpetrator who claims not to have wanted it, or a motor vehicle collision while responding to a call out in your personal vehicle. These types of claims are not covered by malpractice and any assumption that they are otherwise covered by the provider's personal insurance or the supported agency would be presumptive without written assurance.

Some law enforcement agencies will directly employ TEMS providers, either as sworn officers or civilians. Many other TEMS programs rely on agreements between the law enforcement agency and a government (eg, the fire department) or private (eg, a hospital) agency. These agreements are usually documented as Memoranda of Understanding (MOU) or Letters of Agreement (LOA) between the two agencies and are essential to assuring the protection of all parties, as well as the citizens served by them. The MOU

should address the issues of function and process discussed in this article, such as liability, equipment, training, compensation, and response procedures, as well as procedures for renewing or terminating the agreement. It should be in place between the TEMS provider, or his parent agency, and the supported law enforcement agency *before* the program goes into operation.

### EQUIPMENT

The equipment required for a TEMS provider will depend on 2 primary factors, the level of training of the provider and the role of the TEMS provider with the team. As a frame of reference, the average cost for equipping a Los Angeles County Sheriff's Department tactical medic is about \$6840.<sup>19</sup> The tactical medic should be dressed in the same agency uniform as the tactical team. This is particularly important on multiagency incidents, in which other teams may not have personal familiarity with the medics, to avoid confusion and potential friendly fire incidents. Personal protective equipment must be available, including body armor, eye armor, ballistic helmet, boots, gloves, and chemical protective equipment. Chemical protective equipment should include an air purifying respirator (APR) with a selected filter that will cover known or anticipated radiological, chemical, and biological hazards. Personnel who utilize APRs must have a medical evaluation and be fit tested in accordance with the Code of Federal Regulations.<sup>20</sup>

The medical equipment selected by the TEMS unit should be tailored to the training and experience of the medical providers. Weight and volume will be important, and so an item that has multiple uses is given priority over one that has a single use. Traditional EMS colors and reflective markings are inappropriate for the tactical environment and may compromise the team's ability to perform covert or stealth operations. Most equipment is available today in black or camouflage versions for military and tactical application. Many TEMS providers have a small "entry bag"

for use when mobility is a major concern and a larger "aid bag" that can be used to augment the entry bag. The entry bag typically has very basic supplies that will be utilized during the hot zone ("care under fire") phase and potentially for the warm zone ("tactical field care"). Representative supplies include a tourniquet for uncontrolled extremity hemorrhage, simple airway devices such as nasal airways, dressings, and a large bore intravenous (IV) catheter for decompression of a tension pneumothorax. The larger aid bag contains a broad array of medical equipment and supplies that can be utilized to provide a higher level of care to the patient. The exact contents of the medical bags are skill and experience specific and should be tailored to your unit's mission and composition. A frequently forgotten component of the aid bag is pediatric equipment. Innocent children may be injured in an operation and providing care to them is an important part of the medical element's mission.

Evacuation equipment is also a planning consideration. Some teams prefer to utilize a "poleless litter" or "jungle litter" for extraction. This soft litter is easily carried in an aid bag, but requires at least 4 rescuers to effectively carry a patient. Clearly, this manpower requirement may significantly decrease the effectiveness of the tactical team. With this in mind, many units use manual carries for initial extraction, and then transfer to a rigid litter or ambulance roller cot. While this technique is effective for short distances, long extractions are extremely difficult, and cervical spine stabilization, although rarely indicated in the tactical setting, cannot be adequately preformed without a rigid litter.

### SUMMARY

TEMS is a concept that finds its basis in military medicine and combat casualty care and is a growing area of specialization in emergency medicine. Currently there are multiple TEMS models being used effectively in the United States and other countries. Each program must be designed to

meet local need with the resources available and therefore, a successful program in one jurisdiction may not work as well in another jurisdiction. Proponents of proposed TEMS programs must consider numerous fac-

tors when crafting their program. There currently exist a number of controversies in TEMS and continued study of this important area of medicine will help resolve these in the future.

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### **Bureau of Alcohol, Tobacco, Firearms and Explosives**

The Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF) is a law enforcement agency within the US Department of Justice. Its unique responsibilities include protecting the public and reducing violent crime through enforcement of Federal laws and regulations relating to alcohol, tobacco products, firearms, explosives, and arson. ATF's Special Operations Division, Critical Incident Management Branch, maintains an Operational Medical Program. Medics are assigned to provide coverage for all Special Response Team (tactical) operations and training as well as other Bureau activities.

ATF Medics must be certified as National Registry EMT-Basics and must possess current EMT-Tactical certification from the Department of Defense. ATF provides support for previously trained advanced life support (ALS) personnel to maintain their certification, but has not undertaken training of new ALS providers. Extended scope of practice has been granted to EMT-Basic personnel to perform orotracheal intubation and needle chest decompression, and to handle minor sick call issues using approved over-the-counter medications. These practices have evolved over the 8-year history of the program and require additional training approved by medical control.

Medical control for ATF medics is provided through a reimbursable memorandum of understanding (MOU) with the Department of Defense. This MOU provides for off-line and on-line medical control, quality assurance mechanisms, and training. As a backup provision, ATF protocols provide options for medics to accept on-line medical control from local medical control base stations in the event in-house physician contact is unavailable or impractical because of operational conditions.

Special Agent Medics are classified into 3 tactical categories: (1) "SRT Operator Medics" are tactical operators, qualified as medics. These personnel are interchangeable on missions, generally work with one specific SRT,

and are often a full-time SRT team member, (2) "SRT Medics" drill quarterly with the SRT they are assigned to, meet SRT physical and weapons standards, but are only assigned to the medic role on SRT missions, (3) Special Agent Medics are non-SRT personnel and provide much of the coverage for non-SRT missions, such as explosives destruction, diving missions, field division warrant service, training missions, etc. These personnel may deploy to SRT missions, in which case they are assigned with the SRT Supervisor at the inner/outer perimeter interface.

SRT Standard Operating Procedures normally require that 2 medics be present for an operation. One medic is assigned with the SRT supervisor to ensure flexibility in providing medical care and the ability to coordinate other ATF medics, civilian EMS, etc. Additional medic personnel are assigned based on their level of qualification and specific operation needs.

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*Critical Incident Management Branch*  
*Special Operations Division*

### **Columbia County (GA) Sheriff's Office**

Columbia County Sheriff's Office has maintained an integrated Tactical Emergency Medical Support (TEMS) program in support of the Special Response Team (SRT) for the past 3 years. While there are many models for a TEMS program, Columbia County has maintained an all physician team for medical support. The content of the TEMS program consists of 5 Emergency Medicine Physicians, one of which is the Medical Director. The Medical Director provides oversight for the team, acts as a liaison to the SRT team commander, and provides medical education to the team itself. All physicians are required to pass the SRT physical fitness test and attend a weapons safety course. The physicians will then attend training with the SRT for additional skills on firearms, tactics, force policies, defensive tactics, and weapons

retention skills. Physicians that meet and maintain the same training and firearms qualifications as the team members are allowed to attend Special Weapons and Tactics (SWAT) school. These team members are armed and may enter the inner perimeter ("hot zone") if needed with the team. For a call out, the team members are notified by pager. The traditional structure for a call out with our team consists of the physician being in the perimeter acting as a liaison to the Team Commander. When needed, the TEMS provider may enter the inner perimeter to provide assistance. For this reason, the TEMS provider is equipped with appropriate protective equipment (body armor, Kevlar helmet, etc) and appropriate training. There have been multiple occasions requiring the physician to enter the inner perimeter to provide medical care, which provides support of the need for tactical training for the medical provider.

One unique aspect of the Columbia County Sheriff's Office TEMS program is the training of resident physicians. Currently 3 of the team's members are residents at the Medical College of Georgia, Department of Emergency Medicine. As part of the program, residents are not only trained in SWAT maneuvers, but also learn how to develop a TEMS program, maintain a Memorandum of Understanding, provide medical care under fire, preventive medicine, and maintenance of medical equipment. The goal of this program is not only to have qualified physicians providing medical support, but also to educate these physicians to build a TEMS program from the ground up after graduation from residency. The resident physicians are supervised by the Medical Director when involved in tactical operations.

All TEMS physicians are also cross trained as flight physicians for our local air ambulance service. This cross training allows continuity of care from the point of injury throughout the casevac phase of care. With an all physician team, the TEMS program is not only able to provide an expanded scope of practice, but also able to provide preventive medical care, apply extended practice experience and procedural skills, and act as a liaison to the team

commander. We also consider the training of future TEMS medical directors an important part of our mission.

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*Medical Director*

*Columbia County Special Response Team Director*

*Office of Tactical Medicine*

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**Hamilton County Police Association Regional SWAT Team**

The Hamilton County Police Association (HCPA) Regional Special Weapons and Tactics (SWAT) Team Medical Support Program (MSP) began with the inception of the team over 25 years ago in Hamilton County, Ohio. Dr Edward Otten founded the medical program on the basis of his experience as a corpsman in Vietnam. The MSP has grown to include both physicians and paramedics who volunteer to train and to operate as an integral part of the SWAT Team.

Medical members are chosen after successful completion of a rigorous selection process that includes physical fitness assessment, interviews, psychiatric evaluation, and medical skills assessment. Each member then undergoes initial specialized training in tactical medicine and then participates in monthly refresher training on a variety of medical readiness topics. Emphasis in medical training is placed on delivery of care under tactical conditions and global team preventive health measures. Medics also participate in all tactical team training to become proficient in the basics of weaponcraft and tactical movement.

During operations, the tactical medics are incorporated into all levels of the SWAT response—the inner perimeter for immediate care, the outer perimeter for medical surveillance, and the command post for medical intelligence. Medics carry firearms during operations if they are jointly trained as sworn law enforcement officers. Medical control is provided at an incident by the Medical Team

Leader or his designee. Medics work closely with local emergency medical services, hospitals, and aeromedical evacuation services to optimize resource support on scene during a callout.

The HCPA SWAT MSP is always striving to provide for the safety and welfare of the tactical team during training and operations. Their commitment and dedication to their teammates is reflected by their willingness to place themselves at risk to deliver care where and when it may be needed most.

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### **Maryland State Police**

The Maryland Department of State Police formally established its tactical medical unit in July 2000. The decision to implement the program followed a 4-day hostage barricade incident in Dundalk, Md. During this incident, state trooper/paramedics assigned to the operation demonstrated their ability to provide medical care inside a law enforcement perimeter during an extended operation conducted within a densely populated residential area.

The tactical medical unit currently consists of one full-time state trooper/tactical paramedic assigned to the Special Operations Division (SOD) who deploys with the full-time Special Tactical Assault Team Element (STATE). Five additional state trooper/flight paramedics selected from a cadre of 48 trooper/flight paramedics in the Aviation Division provide additional coverage and support. SOD selected these paramedics on the basis of their qualifications that included their experience as a paramedic, work history, communication skills, and leadership potential. Trooper/flight paramedics selected for the tactical medicine program must also success-

fully complete the EMT-Tactical certification program offered by the Department of Defense. Two STATE team operators recently expressed interest in medical operations and they were provided training time to successfully obtain EMT-Basic certification and to complete the EMT-Tactical course. These operators maintain their primary responsibility as a team leader and as "point." All tactical paramedics train with the STATE team to master team tactics, movements, weapon systems, and immediate action drills. They also receive additional training in trauma management, scene management, supporting extended operations, as well as an orientation to primary care, sports medicine, and occupational health concerns.

Physicians and paramedics in the tactical medical unit provide a comprehensive care package that encompasses primary care, occupational health and safety, and emergency medicine. If a casualty occurs, then tactical paramedics provide care in accordance with their scope of practice defined by state emergency medical services (EMS) protocols, under the oversight of the Aviation Division's aeromedical director. For all other medically related issues, care is provided under the direction of a tactical physician. Tactical physicians are the operational component of the Department's Medical Division and they are available immediately to paramedics during all phases of an operation, either by telephone or on-scene presence. When deployed on high-risk, large-scale, or extended operations, tactical physicians provide consultative and clinical services that include providing sick call support, serving as a liaison to local EMS providers and specialty care facilities, and coordinating the resources of the unit. Tactical paramedics retain their flight status as state trooper/flight paramedics and maintain their paramedic clinical skills by completing time aboard the fleet of state police helicopters.

Tactical Paramedics are deployed with the entry element on all high-risk operations executed by STATE. On a case-by-case basis, the Tactical Medical Unit provides medical support for extended and large-scale events, civil

disturbances, VIP protection, dive operations and ordnance disposal. Tactical paramedics' primary function during a mission is to provide medical oversight to operations including injury prevention, resource allocation, and rapid access to medical care within the perimeter of operation. All medical activities and patient movements are a coordinated effort between team leaders and the medical component. Tactical paramedics are assigned collateral duties only when additional medical resources are present to ensure that the unit is able to meet its medical responsibilities. Tactical physicians respond to all large-scale or extended operations and hostage/barricade incidents to coordinate and command the medical group within the incident command structure. During these operations, tactical physicians ensure that local medical resources are properly staged, briefed, and ready to assist the operation, as circumstances require.

Communication among members of the tactical medical elements is done using alphanumeric pagers and Nextel® cellular telephones. TELECOM, a central dispatch center, notifies and tracks the response of all specialty teams including the tactical medical unit and provides informational updates as they become available. Team members communicate with each other during the operation using the group talk feature of their Nextel® telephone. Mission data is tracked utilizing a unique database to identify service needs, injury trends, and overtime costs. Data is reviewed to assure appropriate resources are allocated, and countermeasures are established to address injuries unique to the tactical environment.

***F/Sgt Mark E. Gibbons  
Kevin Gerold, DO, JD  
Special Operations Division***

### **United States Park Police**

The United States Park Police is a full-service, uniformed law enforcement agency with responsibility for Department of the In-

terior properties. The Force is headquartered in Washington, DC with field offices in New York and San Francisco. The United States Park Police Tactical Medicine Program was formally initiated in 1988 after the tragic loss of Special Weapons and Tactics (SWAT) SGT Ricky Preston during a training operation. The tactical medicine program is a 4-echelon system designed to ensure that officers, tactical team members, citizens, and suspects are afforded timely and effective care in high-risk situations.

All tactical team members are provided with "buddy-aid, self-aid" training, which is incorporated into the basic SWAT school. This training focuses primarily on lifesaving trauma management and self-help wellness. These members constitute the first echelon of care. The second echelon consists of one selected tactical team member for each squad who is qualified as a Nationally Registered EMT-Basic after completing both SWAT basic and specialty training. These full-time, police officer medics must also complete the EMT-Tactical certification program of the Department of Defense and function as both tactical operators and first line medics, although the team commander assigns one primary duty on a case-by-case basis. Advanced life support paramedic/rescue technicians from the United States Park Police Aviation Section provide the third echelon of care. The Aviation Section is notified of all high-risk SWAT operations and coordinates landing zones for the crisis site. When needed, the fourth echelon of care is provided by physicians, physician assistants, and independent duty medics from the Department of Defense in accordance with a Memorandum of Understanding established under authority of the Economy Act. Aviation Rescue Technicians routinely deploy as part of the fourth echelon element.

The Tactical Medicine Program provides a full range of support for all Force activities including counter terrorism operations, high risk warrant service, counter drug operations, public events, crowd control, executive protection, and training. Tactical medics are the first line of defense for the Force on most



operational medicine issues and frequently provide consultation or obtain referrals for Force members in areas ranging from infectious disease control to sports medicine and occupational health.

The tactical medical element is integral to SWAT and the team does not deploy without them, whether doing a high-risk urban drug warrant or an enforcement detail in rural backcountry. The United States Park Police mission is somewhat unique in that the Force has responsibility for thousands of demonstrations and major public events conducted each year on National Park Service properties in Washington, DC and around the country. As

many as 4 tactical medic teams, each consisting of an EMT-B/operator, an independent duty medic, and a physician, as well as a US Park Police medevac helicopter, will be deployed for major events in support of hundreds of officers in the field. The SWAT Commander and the tactical medical element work closely with the Force's solicitor and have been innovative in developing protocols for managing the biological terrorism threat at major events.

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***Special Forces Branch***

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